

Essential Fish Habitat Description **Winter flounder (*Pleuronectes americanus*)**

In its *Report to Congress: Status of the Fisheries of the United States* (September 1997), NMFS determined the Gulf of Maine and Southern New England stocks of winter flounder are currently overfished. This determination is based on the fishing mortality rate. There is not enough information to determine if the Georges Bank stock is overfished or approaching an overfished condition. Essential Fish Habitat for winter flounder is described as those areas of the coastal and offshore waters (out to the offshore U.S. boundary of the exclusive economic zone) that are designated on Figures 15.1 - 15.4 and in the accompanying table and meet the following conditions:

Eggs: Bottom habitats with a substrate of sand, muddy sand, mud, and gravel on Georges Bank, the inshore areas of the Gulf of Maine, southern New England, and the middle Atlantic south to the Delaware Bay as depicted in Figure 15.1. Generally, the following conditions exist where winter flounder eggs are found: water temperatures less than 10° C, salinities between 10 - 30‰, and water depths less than 5 meters. On Georges Bank, winter flounder eggs are generally found in water less than 8°C and less than 90 meters deep. Winter flounder eggs are often observed from February to June with a peak in April on Georges Bank.

Larvae: Pelagic and bottom waters of Georges Bank, the inshore areas of the Gulf of Maine, southern New England, and the middle Atlantic south to the Delaware Bay as depicted in Figure 15.2. Generally, the following conditions exist where winter flounder larvae are found: sea surface temperatures less than 15° C, salinities between 4 - 30‰, and water depths less than 6 meters. On Georges Bank, winter flounder larvae are generally found in water less than 8°C and less than 90 meters deep. Winter flounder larvae are often observed from March to July with peaks in April and May on Georges Bank.

Juveniles: *Young-of-the-Year:* Bottom habitats with a substrate of mud or fine grained sand on Georges Bank, the inshore areas of the Gulf of Maine, southern New England and the middle Atlantic south to the Delaware Bay as depicted in Figure 15.3. Generally, the following conditions exist where winter flounder young-of-the-year are found: water temperatures below 28°C, depths from 0.1 - 10 meters, and salinities between 5 - 33‰. *Age 1+ Juveniles:* Bottom habitats with a substrate of mud or fine grained sand on Georges Bank, the inshore areas of the Gulf of Maine, southern New England and the middle Atlantic south to the Delaware Bay as depicted in Figure 15.3. Generally, the following conditions exist where juvenile winter flounder are found: water temperatures below 25°C, depths from 1 - 50 meters, and salinities between 10 - 30‰.

Adults: Bottom habitats including estuaries with a substrate of mud, sand, and gravel on Georges Bank, the inshore areas of the Gulf of Maine, southern New England and the middle Atlantic south to the Delaware Bay as depicted in Figure 15.4. Generally, the following conditions exist where winter flounder adults are found: water temperatures below 25° C, depths from 1 - 100 meters, and salinities between 15 - 33‰.

Spawning Adults: Bottom habitats including estuaries with a substrate of sand, muddy sand, mud, and gravel on Georges Bank, the inshore areas of the Gulf of Maine, southern New England and the middle Atlantic south to the Delaware Bay as depicted in Figure 15.4. Generally, the following conditions exist where winter flounder adults are found: water temperatures below 15° C, depths less than 6 meters, except on Georges Bank where they spawn as deep as 80 meters, and salinities between 5.5 - 36‰. Winter flounder are most often observed spawning during the months February - June.

All of the above EFH descriptions include those bays and estuaries listed on the following table, according to life history stage. The Council acknowledges potential seasonal and spatial variability of the conditions generally associated with this species.

EFH Designation of Estuaries and Embayments
Winter flounder (*Pleuronectes americanus*)

Estuaries and Embayments	Eggs	Larvae	Juveniles	Adults	Spawning Adults
Passamaquoddy Bay	m,s	m,s	m,s	m,s	m,s
Englishman/Machias Bay	m,s	m,s	m,s	m,s	m,s
Narraguagus Bay	m,s	m,s	m,s	m,s	m,s
Blue Hill Bay	m,s	m,s	m,s	m,s	m,s
Penobscot Bay	m,s	m,s	m,s	m,s	m,s
Muscongus Bay	m,s	m,s	m,s	m,s	m,s
Damariscotta River	m,s	m,s	m,s	m,s	m,s
Sheepscot River	m,s	m,s	m,s	m,s	m,s
Kennebec / Androscoggin Rivers	m,s	m,s	m,s	m,s	m,s
Casco Bay	m,s	m,s	m,s	m,s	m,s
Saco Bay	m,s	m,s	m,s	m,s	m,s
Wells Harbor	m,s	m,s	m,s	m,s	m,s
Great Bay	m,s	m,s	m,s	m,s	m,s
Merrimack River	m	m	m	m	m
Massachusetts Bay	s	s	s	s	s
Boston Harbor	m,s	m,s	m,s	m,s	m,s
Cape Cod Bay	m,s	m,s	m,s	m,s	m,s
Waquoit Bay	m,s	m,s	m,s	m,s	m,s
Buzzards Bay	m,s	m,s	m,s	m,s	m,s
Narragansett Bay	m,s	m,s	m,s	m,s	m,s
Long Island Sound	m,s	m,s	m,s	m,s	m,s
Connecticut River	m	m	m	m	m
Gardiners Bay	m,s	m,s	m,s	m,s	m,s
Great South Bay	m,s	m,s	m,s	m,s	m,s
Hudson River / Raritan Bay	m,s	m,s	m,s	m,s	m,s
Barnegat Bay	m,s	m,s	m,s	m,s	m,s
New Jersey Inland Bays	m,s	m,s	m,s	m,s	m,s
Delaware Bay	m,s	m,s	m,s	m,s	m,s
Delaware Inland Bays	m,s	m,s	m,s	m,s	m,s
Chincoteague Bay			s	s	
Chesapeake Bay					

S ≡ The EFH designation for this species includes the seawater salinity zone of this bay or estuary (salinity > 25.0‰).

M ≡ The EFH designation for this species includes the mixing water / brackish salinity zone of this bay or estuary (0.5 < salinity < 25.0‰).

F ≡ The EFH designation for this species includes the tidal freshwater salinity zone of this bay or estuary (0.0 < salinity < 0.5‰).

These EFH designations of estuaries and embayments are based on the NOAA Estuarine Living Marine Resources (ELMR) program (Jury *et al.* 1994; Stone *et al.* 1994). For a detailed view of the salinity zone boundaries, as described in the ELMR reports, please see Appendix B. The Council recognizes the spatial and temporal variability of estuarine and embayment environmental conditions generally associated with this species.

Essential Fish Habitat
Winter flounder (*Pleuronectes americanus*) Eggs

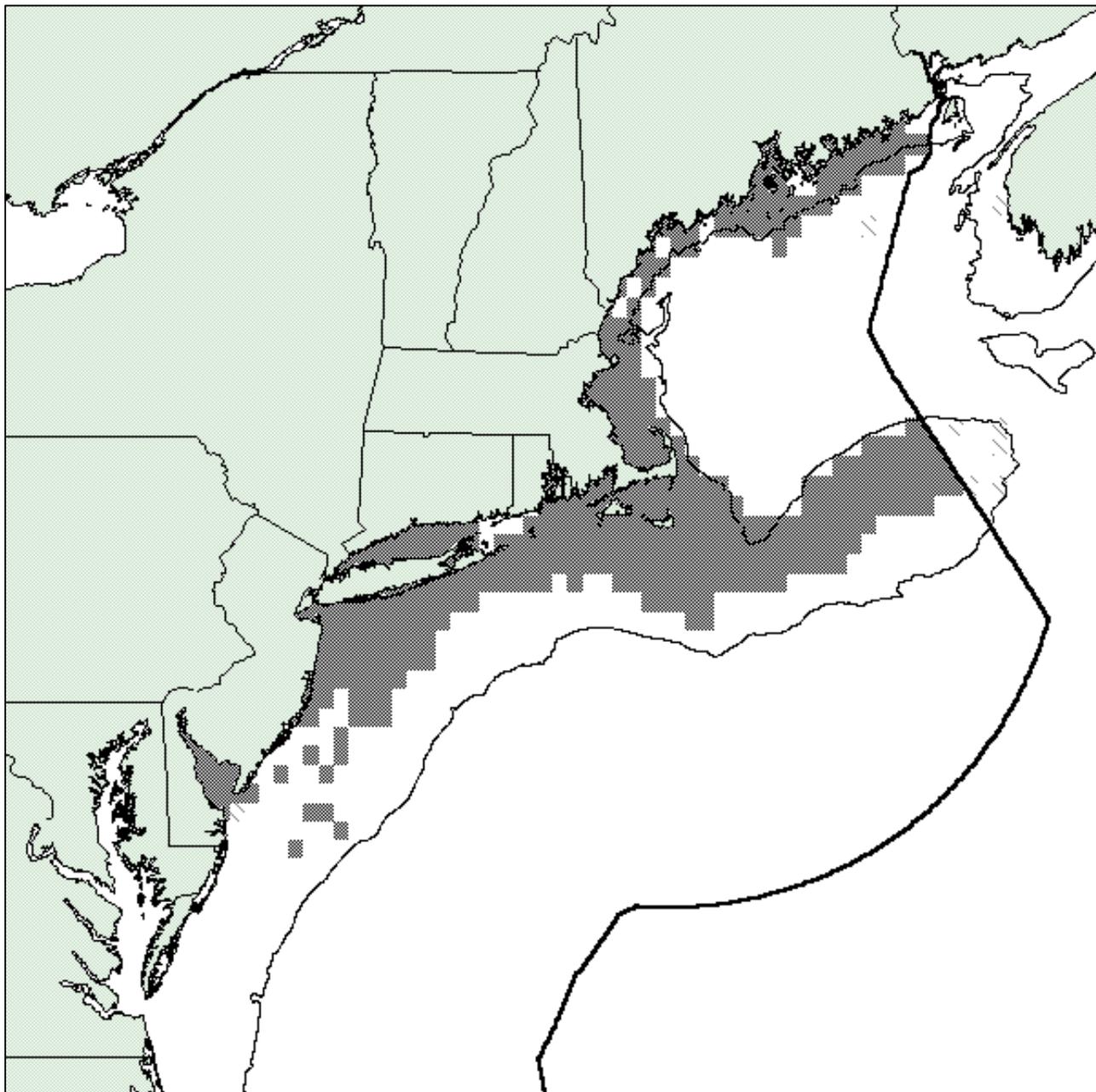


Figure 15.1: The EFH designation for winter flounder eggs is based upon alternative 3 for winter flounder adults. This designation also includes those bays and estuaries identified by the NOAA ELMR program as supporting winter flounder eggs at the "common" or "abundant" level. The observed distribution of winter flounder eggs is very patchy with very few observations, thus the distribution of adults was used as a proxy. This alternative was selected as it appears to best identify that portion of the range of winter flounder most important to all life history stages. The light shading represents the entire observed range of winter flounder eggs.

Essential Fish Habitat
Winter flounder (*Pleuronectes americanus*) Larvae

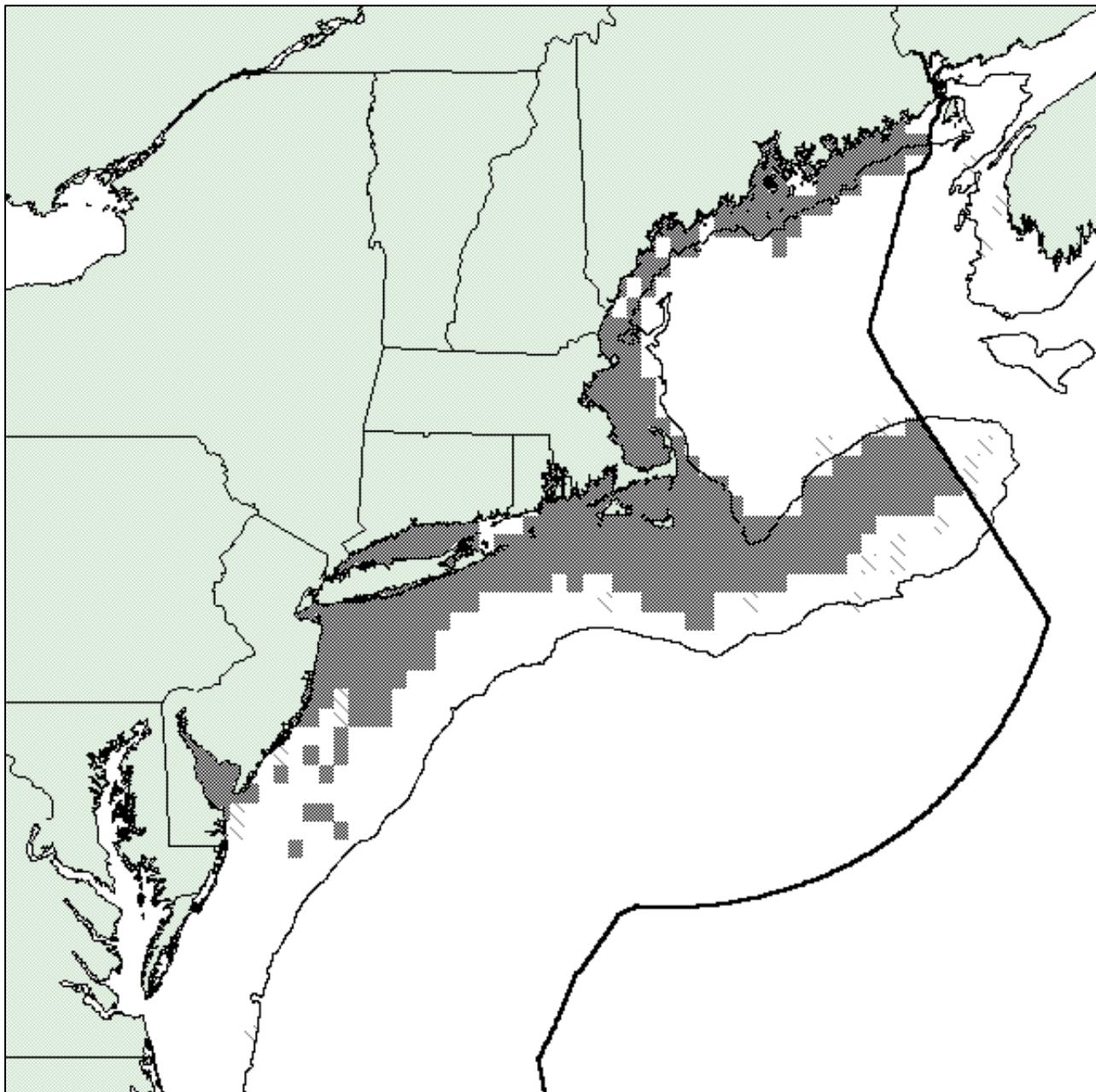


Figure 15.2: The EFH designation for winter flounder larvae is based upon alternative 3 for winter flounder adults. This designation also includes those bays and estuaries identified by the NOAA ELMR program as supporting winter flounder larvae at the "common" or "abundant" level. The observed distribution of winter flounder larvae is very patchy with very few observations, thus the distribution of adults was used as a proxy. This alternative was selected as it appears to best identify that portion of the range of winter flounder most important to all life history stages. The light shading represents the entire observed range of winter flounder larvae.

Essential Fish Habitat
Winter flounder (*Pleuronectes americanus*) Juveniles

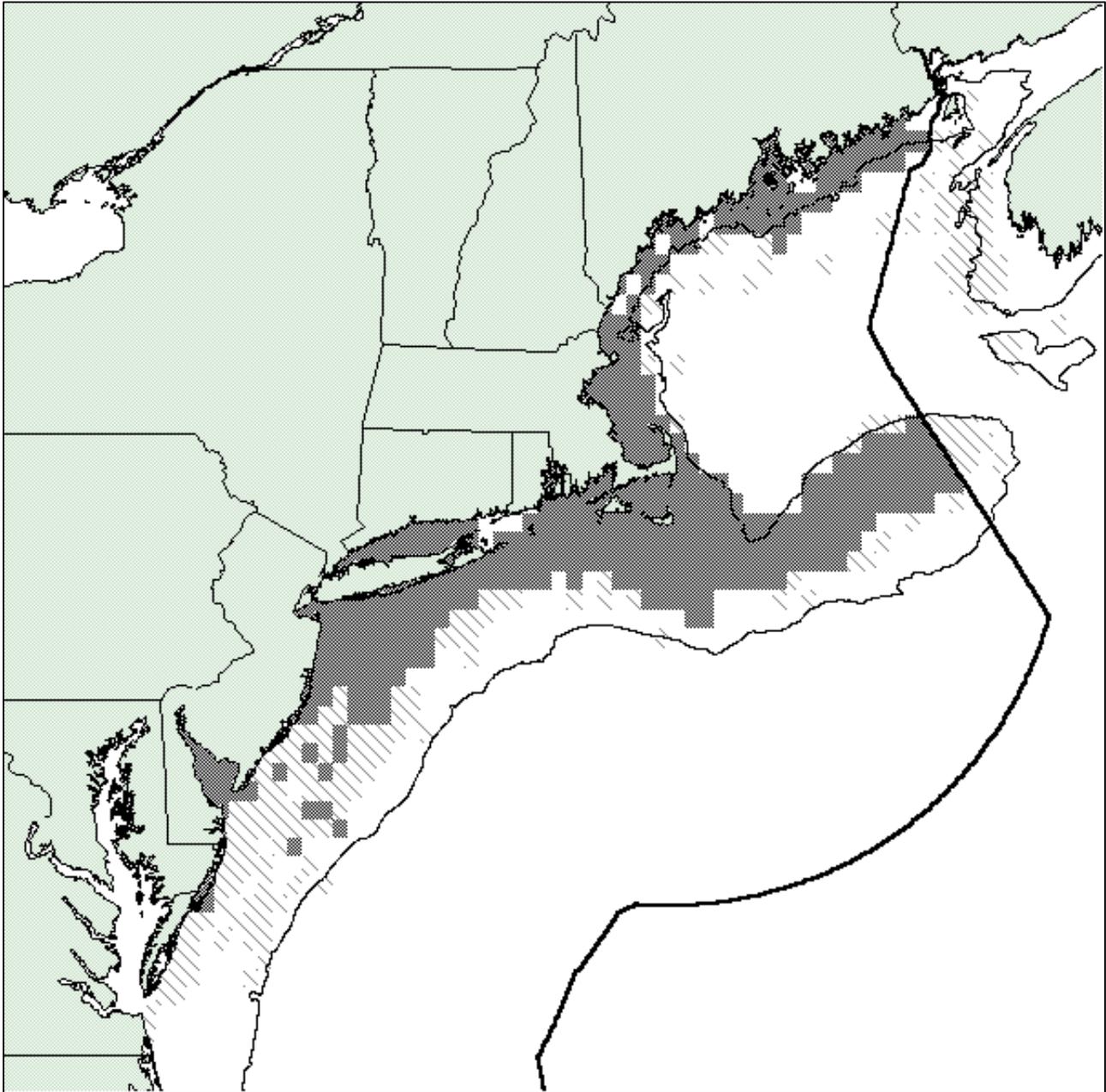


Figure 15.3: The EFH designation for winter flounder juveniles is based upon alternative 3 for winter flounder adults. The EFH designations also include the areas identified by the fishing industry and the inshore surveys as important for winter flounder, as well as those bays and estuaries identified by the NOAA ELMR program as supporting winter flounder juveniles at the "common" or "abundant" level. This alternative was selected as it appears to best identify that portion of the range of winter flounder most important to all life history stages. The other alternatives were not selected because they either include too little area (less than half of the range of this overfished species), or include areas where winter flounder occur in relatively low concentrations. The light shading represents the entire observed range of winter flounder juveniles.

Essential Fish Habitat
Winter flounder (*Pleuronectes americanus*) Adults

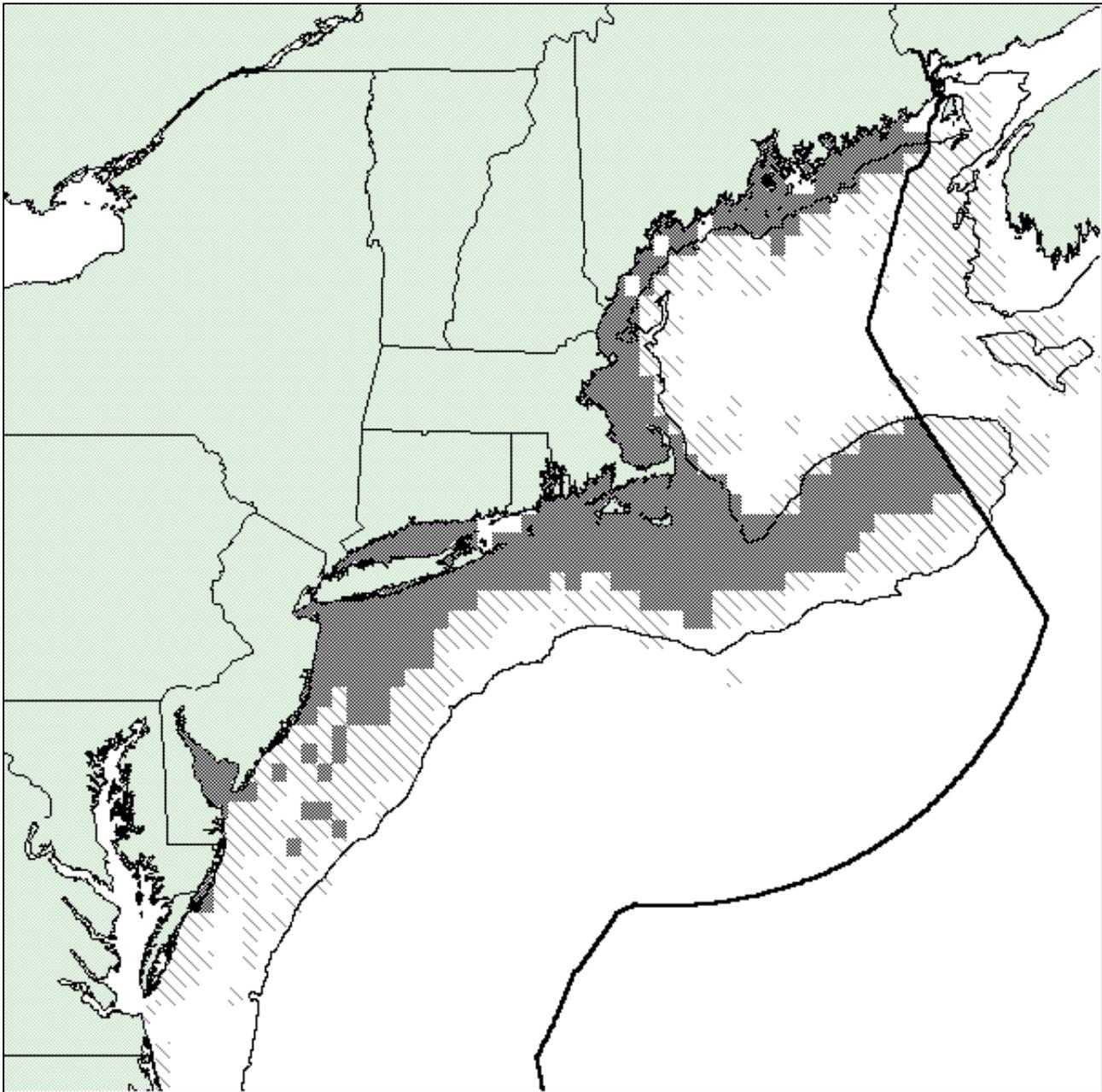


Figure 15.4: The EFH designation for winter flounder adults is based upon alternative 3 for winter flounder adults. The EFH designations also include the areas identified by the fishing industry and the inshore surveys as important for winter flounder, as well as those bays and estuaries identified by the NOAA ELMR program as supporting winter flounder adults at the "common" or "abundant" level. This alternative was selected as it appears to best identify that portion of the range of winter flounder most important to all life history stages. The other alternatives were not selected because they either include too little area (less than half of the range of this overfished species), or include areas where winter flounder occur in relatively low concentrations. The light shading represents the entire observed range of winter flounder adults.